

**Office Action Summary**

Application No.

09/529,588

Applicant(s)

MILLSTEIN, LARRY S.

Examiner

My-Chau T. Tran

Art Unit

1639

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 48-55, 57-67, 69, 71, 73, 74, 76-78, 94-97, 100-105, 107-131, 133-135, 137 and 138 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 17 & 22 6) ☐ Other: \_\_\_\_\_

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### **DETAILED ACTION**

**Note:** The examiner for your application in the PTO has changed. However, the Group and/or Art Unit location of your application in the PTO is remained the same, which is Group Art Unit 1639.

#### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 8/18/03 has been entered.

#### ***Information Disclosure Statement***

2. The information disclosure statements (IDS) submitted by applicant after allowance filed on 8/18/03 in Paper No. 17 and 12/24/03 in Paper No. 22 are acknowledged and considered.

#### ***Status of Claims***

3. Applicant's amendment filed 1/2/03 in Paper No. 15 is acknowledged and entered. Claims 56, 68, 70, 72, 75, 79-93, 98, and 99 are canceled by the amendment. Claims 48-55, 57-58, 63-67, 69, 71, 73, 76, 78, and 95-97 are amended by the amendment. Claims 100-138 are added by the amendment.

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4. Examiner amendment filed 3/25/03 in Paper No. 16 is entered. Claims 106, 132, and 136 are canceled by the amendment. Claims 48, 57, 111, 121, and 129 are amended by the amendment.

5. Claims 48-55, 57-67, 69, 71, 73-74, 76-78, 94-97, 100-105, 107-131, 133-135, and 137-138 are pending.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claims 48-53, 55, 57-62, 71, 73-74, 76-78, 94, 96-97, 100-103, 105, 117-121, 124-131, 133-135, 137, and 138 are rejected under 35 U.S.C. 102(a) as being anticipated by Stimpson (US Patent 6,037,186; filed 7/16/1997). *Note: This prior art was provided by applicant.*

Stimpson discloses “a method to produce arrays of compounds for concurrent testing” (Abstract; col. 3, lines 47-54; col. 4, lines 22-34). “Two formats are described using porous rods or porous sheet materials. In both cases, a bundle is formed by radial compression of the rods or spiral wrapping of the sheet. A sheath is applied to the bundle and arrays are cut as slabs. Each synthesis or application step to create an array element is used to fabricate multiple arrays.” The array elements (array members) comprise biological compounds such as nucleic acid and proteins (col. 3, lines 47-51). The rods comprise materials such as glass, polystyrene, or

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polypropylene (col. 10, lines 16-49) (refers to claims 58-62 and 130-131). The array elements are attached to the rod (col. 4, lines 7-11) (lumen). The method disclosed a random synthesis of a number of compounds resulting in different array elements for each rod within a bundle of rods (col. 10, line 60 to col. 11, line 12) (refers to 'at least two array members are different from one another). The thickness of the cut slabs is in the range of 0.2-1 mm thick (col. 12, lines 11-14) (refers to claims 69). The cutting is performed by either a microtome device or laser (col. 12, lines 12-17 and lines 42-54) (smooth planar cut). The array is use to carry out assay such as binding assay (col. 6, lines 8-36; col. 12, line 57 to col. 14, line 5). Therefore, the method of Stimpson is anticipated the presently claimed invention.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 48-55, 57-67, 69, 71, 73-74, 76-78, 94-97, 100-105, 107-131, 133-135, and 137-138 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pinkel et al. (US Patent 5,690,894) and Stimpson (US Patent 6,037,186).

Pinkel et al. disclose a method "for fabricating biosensors comprising a plurality of biological "binding partners" (molecules that specifically bind other molecules to form a binding complex such as antibody-antigen, lectin-carbohydrate, nucleic acid-nucleic acid, biotin-avidin,

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etc.) linked to optical fibers” (col. 3, lines 2-7). The multiplicity of optical fibers is bundled together to form an optical fiber array (col. 3, lines 18-20). Further, a multiplicity of species of biological binding partner may be attached to each group as long as the multiplicity of species of biological binding partners attached to one fiber group is different than the multiplicity of species attached to the other fiber groups (col. 3, lines 37-43) (refers to ‘at least two array members are different from one another). The binding partner includes nucleic acids, antibodies, proteins, and lectins (col. 3, lines 13-17).

The method of Pinkei et al. does not expressly disclose that sectioning the bundle of target-strands.

Stimpson discloses “a method to produce arrays of compounds for concurrent testing” (Abstract; col. 3, lines 47-54; col. 4, lines 22-34). “Two formats are described using porous rods or porous sheet materials. In both cases, a bundle is formed by radial compression of the rods or spiral wrapping of the sheet. A sheath is applied to the bundle and arrays are cut as slabs. Each synthesis or application step to create an array element is used to fabricate multiple arrays.” The array elements (array members) comprise biological compounds such as nucleic acid and proteins (col. 3, lines 47-51). The rods comprise materials such as glass, polystyrene, or polypropylene (col. 10, lines 16-49) (refers to claims 58-62 and 130-131). The array elements are attached to the rod (col. 4, lines 7-11) (lumen). The method disclosed a random synthesis of a number of compounds resulting in different array elements for each rod within a bundle of rods (col. 10, line 60 to col. 11, line 12) (refers to ‘at least two array members are different from one another). The thickness of the cut slabs is in the range of 0.2-1 mm thick (col. 12, lines 11-14) (refers to claims 69). The cutting is performed by either a microtome device or laser (col. 12,

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lines 12-17 and lines 42-54) (smooth planar cut). The array is use to carry out assay such as binding assay (col. 6, lines 8-36; col. 12, line 57 to col. 14, line 5).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include sectioning the bundle of target-strands as taught by Stimpson in the method of Pinkel et al. One of ordinary skill in the art would have been motivated to include sectioning the bundle of target-strands in the method of Pinkel et al. for the advantage of providing a three-dimensional array that behave like membrane composed of porous materials and conduct flow through (Stimpson: col. 3, lines 36-46). One of ordinary skill in the art would have reasonably expectation of success in the combination of Pinkel et al. and Stimpson because both Pinkel et al. and Stimpson disclose method of attaching of binding agent to a rod (Pinkel: col. 10, lines 13-20; Stimpson: col. 4, lines 7-11).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Chau T. Tran whose telephone number is 703-305-6999. The examiner can normally be reached on Monday: 8:00-2:30; Tuesday-Thursday: 7:30-5:00; Friday: 8:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew J. Wang can be reached on 703-306-3217. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1235.

mct

January 21, 2004

  
PADMASHRI PONNALURI  
PRIMARY EXAMINER

Continuation of Disposition of Claims: Claims pending in the application are 48-55, 57-67, 69, 71, 73-74, 76-78, 94-97, 100-105, 107-131, 133-135, and 137-138.